CITY OF CLEVELAND, TN
DEVELOPMENT AND ENGINEERING
RESIDENTIAL INSPECTION CHECKLIST

Please note: This list is not inclusive of all items that may require inspection. Failure to be ready for a requested inspection may result in a re-inspection fee. In a Special Flood Hazard Area, all provisions of the municipal code and Flood-Resistant construction must be followed

2009 IECC ENERGY INSPECTION REQUIREMENTS:

REQUIREMENT AND CODE SECTION OR REFERENCE

The building thermal envelope drives all your insulation requirements. First you must determine where the building thermal envelope has been located.

TABLE 402.1.1 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE	FENESTRATION *U*-FACTOR[b]	SKYLIGHT[b] *U*-FACTOR	GLAZED FENESTRATION SHGC[b, e]	CEILING *R*-VALUE	WOOD FRAME WALL *R*-VALUE	MASS WALL *R*-VALUE[i]	FLOOR *R*-VALUE	BASEMENT[c] WALL *R*-VALUE	SLAB[d] *R*-VALUE & DEPTH	CRAWL SPACE[c] WALL *R*-VALUE
4 except Marine	0.35	0.60	NR	38	13	5/10	19	10/13	10, 2 ft	10/13

a. *R*-values are minimums. *U*-factors and SHGC are maximums. R-19 batts compressed into a nominal 2 × 6 framing cavity such that the *R*-value is reduced by R-1 or more shall be marked with the compressed batt *R*-value in addition to the full thickness *R*-value.

b. The fenestration *U*-factor column excludes skylights. The SHGC column applies to all glazed fenestration.

c. "15/19" means R-15 continuous insulated sheathing on the interior or exterior of the home or R-19 cavity insulation at the interior of the basement wall. "15/19" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulated sheathing on the interior or exterior of the home. "10/13" means R-10 continuous insulated sheathing on the interior or exterior of the home or R-13 cavity insulation at the interior of the basement wall.

d. R-5 shall be added to the required slab edge *R*-values for heated slabs. Insulation depth shall be the depth of the footing or 2 feet, whichever is less in Zones 1 through 3 for heated slabs.

e. There are no SHGC requirements in the Marine Zone.

f. Basement wall insulation is not required in warm-humid locations as defined by Figure 301.1 and Table 301.1.

g. Or insulation sufficient to fill the framing cavity, R-19 minimum.

h. "13+5" means R-13 cavity insulation plus R-5 insulated sheathing. If structural sheathing covers 25 percent or less of the exterior, insulating sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25 percent of exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.

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i. The second *R*-value applies when more than half the insulation is on the interior of the mass wall.

j. For impact rated fenestration complying with Section R301.2.1.2 of the *International Residential Code* or Section 1609.1.2 of the *International Building Code*, the maximum *U*-factor shall be 0.75 in Zone 2 and 0.65 in Zone 3.

General

1. R-value is applied by the manufacture to each piece of insulation 12 inches or greater in width. IECC 303.1.1
2. Blown or sprayed insulation requires documentation of the initial installed thickness, settled thickness, settled R-value, installed density, coverage area and number of bags installed. IECC 303.1.1.1
3. A permanent certificate is posted on or in the electrical panel and contains all required information. IECC 401.3
4. Insulation applied to the exterior below grade wall shall be protected to prevent degradation and extend a minimum of 6” below grade. IECC 303.2.1

Building Thermal Envelope

1. The building thermal envelope meets requirements for Climate Zone 4. IECC 402.1.1
2. Access doors from conditioned to unconditioned spaces are weatherstripped and insulated. IECC 402.2.3
3. In ceilings with attic spaces, R-30 may be used to satisfy the requirement for R-38 whenever full height uncompressed R-30 insulation extends over the wall top plate at the eaves. IECC 402.2.1
4. In ceiling without attic space R-30 may be used when space does not allow for higher R-values. The reduction is limited to 500 sq ft. or 20 percent of the total insulated ceiling area. IECC 402.2.2
5. The thickness of blown in insulation is noted on markers. One marker is required for every 300 sq feet of attic space with numbers a minimum of 1” in height, facing the attic access opening. IECC 303.1.1.1
6. Floor insulation is installed to maintain permanent contact with the underside of the subfloor decking. IECC 402.2.6
7. Slab on-grade floors with a floor surface less than 12 inches below grade shall be insulated, HOWEVER, it is not required in jurisdictions designated by the code official as having a heavy termite infestation. City of Cleveland does not require slab edge insulation due to termite infestation. IECC 402.2.8
8. The building thermal envelope shall be constructed to limit air leakage. IECC 402.4.1
9. The buildings air leakage rate has been tested and verified by a blower door test (7 ACH_{50} Max) IECC 402.4.2

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10. Duct tightness verified (mandatory for ducts outside the building thermal envelope) by post-construction leakage less than or equal to 8 cfm, total post-construction leakage less than or equal to 12 cfm **OR** rough-in test with air handler less than or equal to 6 cfm; without air handler less than or equal to 4 cfm. IECC 403.2.2
11. As an alternative to insulating floors over crawl spaces, crawl space walls shall be permitted to be insulated when the crawl space is not vented to the outside. Crawl space wall insulation shall be permanently fastened to the wall and extend downward from the floor to the finished grade level and then vertically and/or horizontally for at least an additional 24 inches. Exposed earth in unvented crawl space foundations shall be covered with a continuous Class I vapor retarder (6 mil poly) in accordance with the International Building Code. All joints of the vapor retarder shall overlap by 6 inches and be sealed or taped. The edges of the vapor retarder shall extend at least 6 inches up the stem wall and shall be attached to the stem wall. IECC 402.2.9